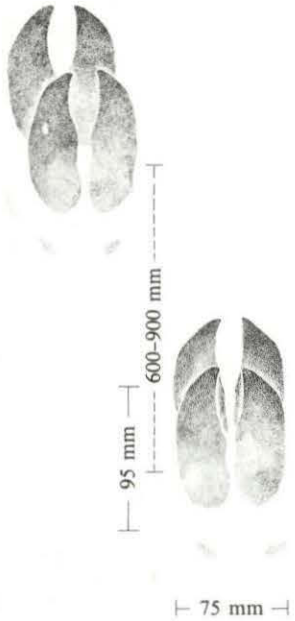
North American elk

Elk tracks



The North American elk, or wapiti, is the largest form of the red deer species *Cervus elaphus*. "Elk" is the name by which most Canadians know this majestic deer. "Wapiti," meaning "white rump," is the Shawnee Indian name and the common name preferred by scientists, because the animal known as an "elk" in Europe is not a red deer at all but a close relative of the North American moose. Other red deer, smaller and belonging to several subspecies, are found throughout the northern hemisphere: in Scotland and continental Europe, in North Africa, and in Asia.

Appearance

In general appearance elk are obviously kin to the well-known white-tailed deer. However, elk are much larger. Among Canadian deer, they are second in size only to the moose.

The colour of the elk's coat ranges from reddish brown in summer to dark brown in winter. Although it looks white from a distance, on closer inspection the rump colour is ivory to orange. In contrast to the rump, the head and neck are dark. Elk have long, blackish hair on the neck that is referred to as a mane. Their hooves are rounded and their tracks may be confused with those of yearling cattle in range country. Their droppings (scats), like those of other deer, are in the form of pellets in winter, but in summer, when the animals are on new green forage, resemble those of cattle. Closer inspection, however, reveals traces of a pellet structure.

Male elk are notable for their impressively large antlers. It is amazing that these large structures are grown new each year by the animals in a period of a few months in spring and summer. Antlers look particularly large in summer when they are encased in velvet — a covering that protects the growing antlers. In later summer, the velvet is rubbed from the fully grown antlers and the boney structure is revealed. Newly cleaned antlers are light grey in colour but become stained by rubbing and thrashing vegetation during the excitement of the rutting season. (Rutting is an annual state of sexual excitement in the male deer.)

The elk is highly vocal for an ungulate. A person close to a group of elk can hear frequent grunts and squeals as they keep in touch with each other. When alarmed the cows give sharp barks to warn the rest of the group. The whistling roar of rutting bulls is a spine-tingling sound on a frosty autumn morning.

Diet

Elk are plant eaters. There are few plants that occur on their range that they do not eat in certain areas under certain conditions. In winter they eat grasses when they can obtain them. However, when the snow gets deep, they readily eat twigs of woody species, even the conifers like Douglas fir. In spring, grasses and sedges are favourite foods. As broad-leaved herbaceous plants spring up in early summer, elk include a high proportion of them in their diet. They also consume shrub and tree twigs and leaves. Early summer is the time of year when a wide variety of nutritious food is available for elk; it is also the time when cow elk are providing milk for their newborn calves.

As summer passes, the herbaceous plants dry out and elk turn again to dry grasses and browse. When the frosty nights of autumn arrive, leaves begin to fall in trembling aspen forests on the western ranges of the elk. Elk include dry leaves in their diet and continue to eat them until they are buried by snow. When winter comes, elk diets are controlled largely by snow. Elk dig craters in loose snow to expose dry grass and leaves, but when the snow gets too deep or too hard they must shift their feeding largely to woody twigs. In the mountains of Alberta and British Columbia elk must leave areas of deep snow cover and seek locations such as valley bottoms where snow cover is shallow or absent. In areas where deep snow seldom occurs, they may frequent high- or low-elevation ranges at any time of the year.

Distribution of elk

Life history

Elk are sociable animals. They are seldom found without other elk nearby. The herd lifestyle is characteristic of animals that live in open country. However, elk populations today occupy forest or parkland regions, where small groups averaging six or seven animals are common.

Elk are long-lived animals: males survive to an average of 14 years, whereas females live as long as 24 years. Although they may travel widely, each elk is strongly attached to certain localities within its home range.

The annual cycle of the elk begins in spring with release from the snows and food shortage of winter. This is the time of calving and increasing of the herds. Calving usually occurs in areas with which the cow is very familiar. Some cows may seek the same area to calve in year after year. Others give birth to their calves in whatever part of their home range they hap-

Scats of mule deer, elk, and moose

pen to be in when the time comes. Whenever calving occurs, the cows split off from other elk and seek seclusion and cover a few days before giving birth. Elk hide their calves for 10 days or more after they are born. The calves are genetically programmed to remain quiet and concealed as a defense against predators. Later, mother and offspring join others in cow/calf bands on the summer range. Beginning in August, the quiet summer life of the elk comes to an end with the start of the rut. The bulls, which have passed a lazy summer in small groups while their antlers grew large and heavy, now move into the cow/calf group and establish harems of cows. In the process there is considerable fighting among the bulls. Large bulls eventually get control of as many as 20 or 30 cows and drive other males to the fringes of the herds. This does not mean, however, that the young males are totally left out of the breeding. While the large harem masters are running off intruders or rounding up straying females on one side of their group, a young bull may sneak in and mate with a female on the other side.

Following the turmoil of the rut, the bull elk leave the females and move to good foraging areas to recoup their losses in weight and condition before winter. Some go back up the mountains to spend a few more weeks on the nutritious pastures of the alpine zone before snow forces them down. Elk usually, but not always, wait for the coming of snow to move down to the valleys. There is considerable overlap between the winter ranges of bulls and cows. As bulls are larger and more powerful they can travel and dig through deep snow more readily than the cows, and by doing so they are able to have foraging areas to themselves.

Distribution

The present population of elk in Canada is about 72 000. Over half (40 000) are in British Columbia, mostly in the Kootenays and in the Peace–Omineca Region, but with a small population on Vancouver Island. Alberta's 20 000 elk roam mainly in the Rocky Mountain foothills and the mountain national parks of Banff, Jasper, and Waterton. A scattered population exists in the parkland (where the boreal forest meets the grassland) across central Alberta, where a notable contribution to the survival of elk in Canada has been the creation of Elk Island National Park. The park grew from a reserve established in 1906 to protect a small band of remaining elk. The elk thrived, and currently the fenced park of less than 200 km^2 supports over 1000 elk as well as moose, bison, and white-tailed deer. Elk Island has provided many elk for reintroductions and has also served as a research area for study of the species.

Manitoba currently has a herd of around 7000 animals, whose distribution centres on Riding Mountain National Park. The 5000 elk in Saskatchewan are mostly in the southern fringe of the boreal forest north of Prince Albert.

Limits of population

The principal limiting factor on the number of elk in Canada has been loss of habitat to agriculture. Fortunately, extensive areas do remain to the elk. Hunting serves to keep elk numbers within the carrying capacity of the ranges. In parks elk numbers are sometimes reduced by capture and transplant of surplus animals.

Aside from humankind the most important predator of elk is the wolf. In spite of their size and power, elk are readily killed by wolves. The distribution of elk in Canada overlaps with wolf distribution, so most elk herds are culled to some extent by wolves. Black bears also kill considerable numbers of elk. Recent studies have demonstrated that in some areas black bears may kill as many as 50% of the elk calves. This predation occurs during the first two or three weeks of the calf's life. Once calves become strong enough to keep up with their mothers, and mother and calf rejoin the rest of the herd, most bear predation ceases. However, grizzly bears may kill an occasional adult elk. Coyotes take some calves, and cougars, which share the elk's range from the Rocky Mountain west, take elk of all ages.

Where predation and hunting do not keep them low, elk numbers usually increase until they are limited by lack of food. At high population levels, elk can have a significant impact on their range and on their food plants by grazing, browsing, and trampling of vegetation. During severe winters or droughts, significant numbers of elk may starve or become predisposed to disease. The managers of many of the Canadian elk populations that are not in parks aim to keep elk numbers well below the maximum dictacted by food resources so that elk will be less likely to experience die-offs.

Relationship to people

Elk are highly esteemed by hunters and are one of North America's major big game species. In Canada approximately 4000 elk are taken by licensed hunters each year. The hunt generates local economic activity estimated at about $14 million per year. In addition, aboriginal hunters take an unknown number. In parks where elk are not hunted, they gradually become habituated to the presence of humans. They may eventually become so tame that they go about their business undisturbed even when people approach closely. Large numbers of habituated elk may be seen in Banff and Jasper national parks in and around the townsites, especially in early spring. Habituated elk are important attractions in those parks and are an asset of substantial aesthetic and commercial value. It must always be kept in mind that animals habituated to humans may be dangerous if approached too closely. Bulls, especially, should be given a wide berth during the early autumn rutting season.

In mountain areas during winter, elk share valley bottoms with major transportation corridors. This leads to many elk-vehicle collisions, with disastrous results to the elk and to humans

and their automobiles. This costly hazard has been controlled in Banff National Park by construction of a system of fences, cattleguard gates, and underpasses along the Trans-Canada Highway.

The readiness with which elk can be habituated to people and the value of products derived from them have recently aroused considerable interest in domestication and ranching of the animals. One of the most valuable elk products is their antlers. Since ancient times, Oriental people have believed that medicinal preparations from elk antlers that have been removed while still in velvet are a general tonic and possibly an aphrodisiac. Thus Oriental medicine consumes large quantities of elk antler at a high price. Antlers are surgically removed when they have reached maximum size but before they harden; then they are dried, sorted by grade, and shipped to Asian markets.

In many areas elk and domestic cattle share the same ranges. Because both eat the same foods and the presence of cattle brings human activity, there is some conflict between the two species. In mountain areas where elk concentrate in valleys that are also important winter range for cattle there is competition for scarce forage and disturbance of elk at a time when they are under stress due to severe weather. Such situations call for close cooperation between ranchers and wildlife managers to keep problems under control.

The future welfare of elk in general depends on cooperation between wildlife authorities and all land managers, including forest industries, oil and mining companies, park managers, and Indian bands, as well as ranchers.

In spite of these ongoing conflicts, Canadian elk populations are stable and healthy. It might be possible to reintroduce the animals to areas they formerly occupied, but, given the competing demands for land by ranchers and others, and the space needed by the wild predators of the elk, which are vital to a healthy ecosystem, the current elk population is probably large enough. With adequate attention to its management this splendid wild species will remain a permanent asset to Canada.

Reading list

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The Canadian Wildlife Service

The Canadian Wildlife Service of Environment Canada handles wildlife matters that are the responsibility of the Canadian government. These include protection and management of migratory birds as well as nationally significant wildlife habitat. Other responsibilities are endangered species, control of international trade in endangered species, and research on wildlife issues of national importance. The service cooperates with the provinces, territories, Canadian Parks Service, and other federal agencies in wildlife research and management.

For more information about the Canadian Wildlife Service or its other publications, please write to:

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